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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,342	10/12/2001	Mark Gottfried	EMCORE 3.0-047	9198

530 7590 02/13/2003

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EXAMINER

GURLEY, LYNNE ANN

ART UNIT

PAPER NUMBER

2812

DATE MAILED: 02/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/976,342

Applicant(s)

Gottfried

Examiner

Lynne Gurley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Nov 6, 2002
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above, claim(s) 1-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). and 7- 6) ☐ Other:

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DETAILED ACTION

Election/Restriction

1. Applicant's election without traverse of claims 21-41 in Paper No.10 is acknowledged.
 - a. Please note that to clarify the record, there are 41 claims total, instead of 42.

Specification

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

- b. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21-25, 27-29, and 34-41 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shibata et al. (US 6,121,127, dated 9/19/00).

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Shibata shows the method as claimed in Figures 1-3 and corresponding text with metal A and 8B. See column 1, lines 40-67; column 2, lines 1-67; column 4, lines 20-67, in particular, lines 39-67; column 5, lines 1-61.

Claim Rejections - 35 USC § 103

c. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

d. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 26, and 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al. (US 6,121,127, dated 9/19/00) in view of Takeya et al. (US 2001/0055871, dated 12/27/01).

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Shibata shows the method as claimed and as described in the preceding paragraph. Additionally, the reactive ion etch is used to etch the semiconductor structure (column 4, lines 49-66).

Shibata lacks anticipation only in not teaching that: 1) the metal is deposited by electron beam deposition (claim 26); 2) a KI:I₂:DI solution is used to etch (claim 30); 3) the resist remains in place while the semiconductor structure is etched (claim 31); 4) BCl₃ is used for the etching (claim 33).

Takeya teaches, in a similar method forming two metal electrodes in an LED structure with one lower than the other, the use of the resist, still in tact, to etch the semiconductor structure (figure 3 and corresponding text; pages 3 to paragraph [0038] of page 4). RIE is used also for the etch. Subsequently, the electrodes are formed.

It would have been obvious to one of ordinary skill in the art to have used the resist as a mask in Takeya to etch the semiconductor structure in the process of Shibata, with the motivation that Takeya teaches that the same structure may be obtained by keeping the resist mask in tact.

It would have been obvious to one of ordinary skill in the art to have deposited the metal by e-beam deposition, with the motivation that it is well known in the art to deposit the subject metals used for the electrodes by this method.

It would have been obvious to one of ordinary skill in the art to have etched with the KI:I₂:DI solution or BCl₃ with the motivation that this is a well known wet etch for the metal being used and for the layers in the semiconductor structure, respectively.

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Prior Art Of Record

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See the PTO Form 892 for additional prior art which contains very similar processes..

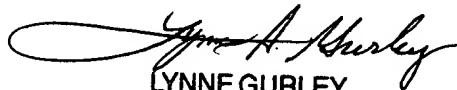
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne A. Gurley whose telephone number is (703) 305-3474. The examiner can normally be reached on Monday-Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John F. Niebling, can be reached on (703) 308-3325. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

lag

February 10, 2003


LYNNE GURLEY
PATENT EXAMINER
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